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(54) Title: LIQUID FORMULATIONS WITH HIGH CONCENTRATION OF HUMAN GROWTH HORMONE (hgh) COMPRIS-ING 1,2-PROLPYLENE GLYCOL

(57) Abstract: The present invention relates to liquid formulations of human growth hormone (hGH, somatropin) which are storage stable, show reduced or no crystallization on storage and are suitable for administration to the human or animal body. More particularly, the invention relates to liquid formulations of human growth hormone which are stable and exhibit minimal or no crystallization when stored at least for a time at temperature above refrigeration temperatures.



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A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A61K47/00 A61K38/27 According to International Patent Classification (IPC) or to both national classification and IPC B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) IPC 7 A61K Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Electronic data base consulted during the international search (name of data base and, where practical, search terms used) EPO-Internal, WPI Data, PAJ, BIOSIS, EMBASE C. DOCUMENTS CONSIDERED TO BE RELEVANT Relevant to claim No. Citation of document, with indication, where appropriate, of the relevant passages 1-29 EP 0 955 062 A (GENENTECH INC) Y 10 November 1999 (1999-11-10) page 5, line 5 -page 5, line 40; claims 15-21 GB 2 371 227 A (GRANDIS BIOTECH GMBH) 1-29 P,Y 24 July 2002 (2002-07-24) example II 1-29 US 5 567 677 A (HOEKBY ELVY ET AL) Α 22 October 1996 (1996-10-22) tables 1-3 Patent family members are listed in annex. X Further documents are listed in the continuation of box C. Special categories of cited documents: *T* tater document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the *A* document defining the general state of the art which is not considered to be of particular relevance Invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone 'E' earlier document but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is clied to establish the publication date of another citation or other special reason (as specified) Y' document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the part. O document referring to an oral disclosure, use, exhibition or other means 'P" document published prior to the international filing date but later than the priority date claimed in the art. *&* document member of the same patent family Date of mailing of the international search report Date of the actual completion of the international search 28/11/2003 5 November 2003 Authorized officer Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016 ESTANOL, I

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